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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/614,951 | 07/08/2003 | Myeong-Jin Lee | SAM-0433 | 7111 |

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| EXAMINER | |
|---|---|
| NGUYEN, TANH Q | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2182 | |

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/614,951 | LEE ET AL. | |
| | Examiner | Art Unit | |
| | Tanh Q. Nguyen | 2182 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *8-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed June 26, 2006 have been fully considered but they moot in view of the new grounds of rejections (see underlined portions of the rejections).

The examiner suggests that applicant include limitations that relate to the interconnections between the different elements of the arbiter shown in FIG. 4 in the claims to differentiate the invention from the teachings of the prior art.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 8-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (USP 5,546,543) in view of Brown et al. (USP 6,397,287), and further in view

of Rudin et al. (USP 6,014,722), O'Brien (USP 6,796,961) and Treadaway et al. (USP 6,907,048).

5. As per claim 12, The combination of Yang, Brown, Rudin and O'Brien discloses the invention except for determining if the occupancy level of the receiving buffer is increasing by comparing the occupancy level of the receiving buffer with a previous receiving buffer occupancy level - when the occupancy level of data in the receiving buffer is greater than the vacancy level of data in the transmitting buffer, and

except for determining if the vacancy level of the transmitting buffer is increasing by comparing the vacancy level of the transmitting buffer with a stored previous transmitting buffer vacancy level - when the occupancy level of data in the receiving buffer is not greater than the vacancy level of data in the transmitting buffer (see the rejection in the previous office action for the combination of Yang, Brown, Rudin and O'Brien - as the teachings of the combination of Yang, Brown, Rudin and O'Brien from the previous office action was not repeated to simplify the prosecution of the application).

Treadaway teaches monitoring the current depth of a receiving buffer and adjusting the rate of a transceiver as the amount of occupied storage space increases to reduce the occupancy level of the receiving buffer [col. 21, lines 13-19; FIG. 13]. Treadaway, therefore, implicitly discloses determining if the occupancy level of the receiving buffer is increasing. Furthermore, since it is well known in the art at the time the invention was made to compare a current occupancy level with a previous occupancy level to determine whether the occupancy level is increasing, it would have

been obvious to one of ordinary skill in the art at the time the invention was made for Treadaway to make the comparison to determine whether the occupancy level of the receiving buffer is increasing in order to adjust the rate of the transceiver accordingly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Treadaway's aforementioned teachings because such incorporation would allow for receiving buffer removal rate adjustment - in order to reduce the occupancy level of the receiving buffer. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Treadaway's teachings when the occupancy level of data in the receiving buffer is greater than the vacancy level of the data in the transmitting buffer because the receiving buffer has the greatest need under such condition (as is taught by O'Brien).

Treadaway also teaches monitoring the current depth of a transmitting buffer and adjusting the rate at which data is retrieved from the transmitting buffer, and an adaptive measure for reducing the vacancy level in the transmitting buffer and preventing the transmitting buffer from becoming empty [col. 19, lines 6-8; col. 19, lines 45-65; FIG. 12]. Because an adaptive measure typically involves monitoring the depth of a buffer and speed up the rate as the buffer depth increases, and reduce the rate as the buffer depth decreases (e.g. Pate et al., US 2003/0026277 A1: [0048], lines 2-6), it would have been obvious to one of ordinary skill in the art at the time the invention was made for Treadaway to implicitly teach determining if the vacancy level of the transmitting buffer is increasing (i.e. if the transmitting buffer depth is decreasing) in order to adjust the rate accordingly. Furthermore, since it is well known in the art at the time the invention was

made to compare a current vacancy level with a previous vacancy level to determine whether the vacancy level is increasing, it would have been obvious to one of ordinary skill in the art at the time the invention was made for Treadaway to make the comparison to determine whether the vacancy level of the transmitting buffer is increasing in order to adjust the rate at which data is retrieved from the transmitting buffer accordingly. In addition, it is necessary for the previous vacancy level to be stored so that the previous vacancy level can be used to compare with the current vacancy level order.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Treadaway's aforementioned teachings because such incorporation would allow for transmitting buffer removal rate adjustment - in order to reduce the vacancy level of the transmitting buffer. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate Treadaway's teachings when the occupancy level of data in the receiving buffer is not greater than the vacancy level of the data in the transmitting buffer because the transmitting buffer has the greatest need under such condition (as is taught by O'Brien).

6. As per claims 13-17, see the rejections of claims 13-17 in the previous office action - as the rejections of claims 13-17 from the previous office action was not repeated to simplify the prosecution of the application.

7. As per claim 8, the combination of Yang, Brown, Rudin, O'Brien and Treadaway above with respect to claim 12, teaches a network controller having transmitting and

receiving buffers, comprising an internal arbiter [25, FIG. 2 - Yang] monitoring the transmitting and receiving buffers, and arbitrating access to a system bus between the transmitting and receiving buffers in response to requests for access to the system bus from the transmitting and receiving buffers (see Yang portion of rejection of claim 12 in the previous office action), wherein the internal arbiter comprises:

an emergency mode determination circuit receiving an occupancy level of data in the receiving buffer and a vacancy level of data in the transmitting buffer, determining whether a present operational state corresponds to an emergency mode as a function of the occupancy level and the vacancy level, and outputting an emergency mode signal (see Brown and Rudin portions of rejection of claim 12 in the previous office action);

a first determination circuit for determining if the occupancy level of the receiving buffer is increasing, and outputting a result of the determination as a first signal; a second determination circuit for determining if the vacancy level of the transmitting buffer is increasing by comparing the vacancy level of the transmitting buffer with a previous transmitting buffer vacancy level and outputting a result of the determination as a second signal (see Treadaway portion of rejection of claim 12 above);

a comparing circuit comparing the vacancy level of the transmitting buffer with the occupancy level of the receiving buffer and outputting a comparison result (see O'Brien portion of rejection of claim 12 in the previous office action); and

an implicit logic circuit outputting a permission signal to the receiving buffer or the transmitting buffer in response to the first signal, the second signal, and the comparison result, the permission signal granting access to the system bus to one of the

transmitting buffer and receiving buffer (see rejection of claim 12 in the previous office action).

The combination above does not specifically teach the previous transmitting buffer vacancy level to be stored in the second determination circuit. Since it was known in the art at the time the invention was made to locate information within a circuit for quicker access of the information by the circuit (as opposed to the information being located externally), it would have been obvious to one of ordinary skill in the art at the time the invention was made to store the previous transmitting buffer vacancy level in the second determination circuit in order to allow for quicker access by the second determination circuit.

8. As per claims 9-11, see the rejections of claims 9-11 in the previous office action - as the rejections of claims 9-11 from the previous office action was not repeated to simplify the prosecution of the application

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanh Q. Nguyen whose telephone number is 571-272-4154. The examiner can normally be reached on M-F 9:30AM-7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TQN
September 12, 2006